SUBJECT INDEX

ANALYSIS OF ALGORITHMS	**745**	A. Borodin, N. Linial, and M. B. Saks—An Optimal On-Line Algorithm for Metrical Task System
	764	A. Fiat, M. Naor, J. P. Schmidt, and A. Siegel—Nonoblivious Hashing
COMMUNICATION PROTOCOLS	**783**	Y. Mansour and B. Schieber—The Intractability of Bounded Protocols for On-Line Sequence Transmission Over Non-FIFO Channels
COMPLEXITY THEORY	**800**	C. Dwork and L. Stockmeyer—Finite State Verifiers I: The Power of Interaction
	829	C. Dwork and L. Stockmeyer—Finite State Verifiers II: Zero Knowledge
	859	C. Lund, L. Fortnow, H. Karloff, N. Nisan—Algebraic Methods for Interactive Proof Systems
	869	A. Shamir—IP = PSPACE
	878	A. Shen—IP = PSPACE: Simplified Proof
COMPUTATIONAL GEOMETRY	**1**	B. Chazelle and H. Edelsbrunner—An Optimal Algorithm for Intersecting Line Segments in the Plane
COMPUTER SYSTEMS	**55**	E. Upfal—An $O(\log N)$ Deterministic Packet-Routing Scheme
DATA STRUCTURES AND ALGORITHMS	**253**	M. B. Dillencourt, H. Samet, and M. Tamminen—A General Approach to Connected-Component Labeling for Arbitrary Image Representations (and corrigenda, p. 985)
	281	J. Katajainen and T. Raita—An Analysis of the Longest Match and the Greedy Heuristics in Text Encoding
	295	R. Ramesh and I. V. Ramakrishnan—Nonlinear Pattern Matching in Trees
	317	R. Sprugnoli—The Generation of Binary Trees as a Numerical Problem
DATABASE THEORY	**71**	R. Demolombe—Syntactical Characterization of a Subset of Domain-Independent Formulas
DISTRIBUTED COMPUTING	**449**	J. Y. Halpern and L. D. Zuck—A Little Knowledge Goes a Long Way: Knowledge-Based Derivations and Correctness Proofs for a Family of Protocols
	881	M. Herlihy, N. Lynch, M. Merritt, and W. Weihl—On the Correctness of Orphan Management Algorithms
GRAPH THEORY	**479**	L. S. Heath and S. Istrail—The Pagenumber of Genus g Graphs Is $O(g)$
INTERCONNECTION NETWORKS	**931**	O. Collins, S. Dolinar, R. McEliece, and F. Pollara—A VLSI Decomposition of the deBruijn Graph
LOGIC	**328**	R. Fagin, J. Y. Halpern, and M. Y. Vardi—What Can Machines Know? On the Properties of Knowledge in Distributed Systems
	377	J. Gallier, P. Narendran, S. Raatz, and W. Snyder—Theorem Proving Using Equational Matings and Rigid E-Unification
OPERATIONS RESEARCH	**502**	A. Billionnet, M. C. Costa, and A. Sutter—An Efficient Algorithm for a Tank Allocation Problem
PROGRAMMING LANGUAGES	**949**	S. K. Debray—Efficient Dataflow Analysis of Logic Programs
PROGRAMMING LANGUAGES AND METHODOLOGY	**147**	L. Aceto and M. Hennessy—Termination, Deadlock, and Divergence
	95	J. A. Goguen and R. M. Burstall—Institutions: Abstract Model Theory for Specification and Programming
STRING PROCESSING	**519**	D. Eppstein, Z. Galil, R. Giancarlo, and G. F. Italiano—Sparse Dynamic Programming I: Linear Cost Functions
	546	D. Eppstein, Z. Galil, R. Giancarlo, and G. F. Italiano—Sparse Dynamic Programming II: Convex and Concave Cost Functions
	430	G. Meyers—A Four Russians Algorithm for Regular Expression Pattern Matching
SYSTEM MODELING AND ANALYSIS	**188**	L. W. Dowdy, B. M. Carlson, A. T. Krantz, and S. K. Tripathi—Single-Class Bounds of Multi-Class Queuing Networks
	568	A. G. Greenberg and N. Madras—How Fair Is Fair Queuing?

THEORY OF COMPUTATION

234 E. Allender and L. A. Hemachandra—Lower Bounds for the Low Hierarchy

599 M. Beaudry, P. McKenzie, and D. Thérien—The Membership Problem in Aperiodic Transformation Monoids

214 M. Bellare and S. Micali—How to Sign Given Any Trapdoor Permutation

617 A. Ben-Amram and Z. Galil—On Pointers versus Addresses

649 W. I. Gasarch and C. H. Smith—Learning via Queries

675 S. M. German and A. P. Sistla—Reasoning about Systems with Many Processes

736 R. Raz and A. Wigderson—Monotone Circuits for Matching Require Linear Depth

AUTHOR INDEX

ACETO, L.	**147**	Termination, Deadlock, and Divergence
ALLENDER, E.	**234**	Lower Bounds for the Low Hierarchy
BEAUDRY, M.	**599**	The Membership Problem, in Aperiodic Transformation Monoids
BELLARE, M.	**214**	How to Sign Given Any Trapdoor Permutation
BEN-AMRAM, A.	**617**	On Pointers versus Addresses
BILLIONNET, A.	**502**	An Efficient Algorithm for a Tank Allocation Problem
BORODIN, A.	**745**	An Optimal On-Line Algorithm for Metrical Task System
BURSTALL, R. M.	**95**	See Goguen, J. A.
CARLSON, B. M.	**188**	See Dowdy, L. W.
CHAZELLE, B.	**1**	An Optimal Algorithm for Intersecting Line Segments in the Plane
COLLINS, O.	**931**	A VLSI Decomposition of the deBruijn Graph
COSTA, M. C.	**502**	See Billionnet, A.
DEBRAY, S. K.	**949**	Efficient Dataflow Analysis of Logic Programs
DEMOLOMBE, R.	**71**	Syntactical Characterization of a Subset of Domain-Independent Formulas
DILLENCOURT, M. B.	**253**	A General Approach to Connected-Component Labeling for Arbitrary Image Representations
DOLINAR, S.	**931**	See Collins, O.
DOWDY, L. W.	**188**	Single-Class Bounds of Multi-Class Queuing Networks
DWORK, C.	**800**	Finite State Verifiers I: The Power of Interaction
	829	Finite State Verifiers II: Zero Knowledge
EDELSBRUNNER, H.	**1**	See Chazelle, Bernard
EPPSTEIN, D.	**519**	Sparse Dynamic Programming I: Linear Cost Functions
	546	Sparse Dynamic Programming II: Convex and Concave Cost Functions
FAGIN, R.	**328**	What Can Machines Know? On the Properties of Knowledge in Distributed Systems
FIAT, A.	**764**	Nonoblivious Hashing
FORTNOW, L.	**859**	See Lund, C.
GALIL, Z.	**519**	See Eppstein, D., Sparse Dynamic Programming I: Linear Cost Functions
	546	See Eppstein, D., Sparse Dynamic Programming II: Convex and Concave Cost Functions
	617	See Ben-Amram, A.
GALLIER, J.	**377**	Theorem Proving Using Equational Matings and Rigid *E*-Unification
GASARCH, W. I.	**649**	Learning via Queries
GERMAN, S. M.	**675**	Reasoning about Systems with Many Processes
GIANCARLO, R.	**519**	See Eppstein, D., Sparse Dynamic Programming I: Linear Cost Functions
	546	See Eppstein, D., Sparse Dynamic Programming II: Convex and Concave Cost Functions
GREENBERG, A. G.	**568**	How Fair Is Fair Queuing?
GOGUEN, J. A.	**95**	Institutions: Abstract Model Theory for Specification and Programming
HALPERN, J. Y.	**328**	See Fagin, R.
	449	A Little Knowledge Goes a Long Way: Knowledge-Based Derivations and Correctness Proofs for a Family of Protocols
HEATH, L. S.	**479**	The Pagenumber of Genus g Graphs Is $O(g)$
HEMACHANDRA, L. A.	**234**	See Allender, E.
HENNESSY, M.	**147**	See Aceto, L.
HERLIHY, M.	**881**	On the Correctness of Orphan Management Algorithms
ISTRAIL, S.	**479**	See Heath, L. S.
ITALIANO, G. F.	**519**	See Eppstein, D., Sparse Dynamic Programming I: Linear Cost Functions
	546	See Eppstein, D., Sparse Dynamic Programming II: Convex and Concave Cost Functions
KARLOFF, H.	**859**	See Lund, C.

KATAJAINEN, J.	**281**	An Analysis of the Longest Match and the Greedy Heuristics in Text Encoding
KRANTZ, A. T.	**188**	See Dowdy, L. W.
LINIAL, N.	**745**	See Borodin, A.
LUND, C.	**859**	Algebraic Methods for Interactive Proof Systems
LYNCH, N.	**881**	See Herlihy, M.
MADRAS, N.	**568**	See Greenberg, A. G.
MANSOUR, Y.	**783**	The Intractability of Bounded Protocols for On-Line Sequence Transmission over Non-FIFO Channels
MC ELIECE, R.	**931**	See Collins, O.
MC KENZIE, P.	**599**	See Beaudry, M.
MERRITT, M.	**881**	See Herlihy, M.
MEYERS, G.	**430**	A Four Russians Algorithm for Regular Expression Pattern Matching
MICALI, S.	**214**	See Bellare, M.
NAOR, M.	**764**	See Fiat, A.
NARENDRAN, P.	**377**	See Gallier, J.
NISAN, N.	**859**	See Lund, C.
POLLARA, F.	**931**	See Collins, O.
RAATZ, S.	**377**	See Gallier, J.
RAITA, T.	**281**	See Katajainen, J.
RAMAKRISHNAN, I. V.	**295**	See Ramesh, R.
RAMESH, R.	**295**	Nonlinear Pattern Matching in Trees
RAZ, R.	**736**	Monotone Circuits for Matching Require Linear Depth
SAKS, M. E.	**745**	See Borodin, A.
SAMET, H.	**253**	See Dillencourt, M. B.
SCHIEBER, B.	**783**	See Mansour, Y.
SCHMIDT, J. P.	**764**	See Fiat, A.
SHAMIR, A.	**869**	IP = PSPACE
SHEN, A.	**878**	IP = PSPACE: Simplified Proof
SIEGEL, A.	**764**	See Fiat, A.
SISTLA, A. P.	**675**	See German, S. M.
SMITH, C. H.	**649**	See Gasarch, W. I.
SNYDER, W.	**377**	See Gallier, J.
SPRUGNOLI, R.	**317**	The Generation of Binary Trees as a Numerical Problem
STOCKMEYER, L.	**800**	See Dwork, C., Finite State Verifiers I: The Power of Interaction
	829	See Dwork, C., Finite State Verifiers II: Zero Knowledge
SUTTER, A.	**502**	See Billionnet, A.
TAMMINEN, M.	**253**	See Dillencourt, M. B.
THÉRIEN, D.	**599**	See Beaudry, M.
TRIPATHI, S. K.	**188**	See Dowdy, L. W.
UPFAL, E.	**55**	An $O(\log N)$ Deterministic Packet-Routing Scheme
VARDI, M. Y.	**328**	See Fagin, R.
WEIHL, W.	**881**	See Herlihy, M.
WIGDERSON, A.	**736**	See Raz, R.
ZUCK, L. D.	**449**	See Halpern, J. Y.